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EXAMINER

CHIANG, JACK

ART UNIT	PAPER NUMBER
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2642

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DATE MAILED: 02/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

08/868702

Applicant(s)

Jon Maravardsen

Examiner

J. Chiang

Group Art Unit

2642

#8

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Response

A SHORTENED STATUTORY PERIOD FOR RESPONSE IS SET TO EXPIRE -3- MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a response be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for response is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to respond within the set or extended period for response will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 12-08-03.
- ☒ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-29 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-29 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☐ Notice of References Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

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CLAIMS

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 6, 10, 20, 24-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith et al. (US 6304222).

Regarding claim 1, Smith shows:

A housing (1);

At least one speaker (10);

At least one antenna (3, 4);

An acoustic resonance chamber (V);

At least one electromagnetic resonance chamber (fig. 2b);

The acoustic resonance chamber (V) is completely or partly located within the electromagnetic resonance chamber (fig. 2b) (col. 3, lines 59-63).

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

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the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11-19, 21-23, 5, 7-9, 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Abraham et al. (US 5953414).

Regarding claim 11, Smith shows:

A housing (1);

At least one speaker (10);

At least one antenna (3, 4);

An acoustic resonance chamber (V);

At least one electromagnetic resonance chamber (fig. 2b);

at least one electromagnetic screen (see 4);

The acoustic resonance chamber (V) is completely or partly located within the electromagnetic resonance chamber (fig. 2b) (col. 3, lines 59-63).

Smith differs from the claimed invention in that it does not explicitly show the speaker and the acoustic chamber are connected through the electromagnetic screen by at least one acoustic coupling means.

However, notice that Smith's electromagnetic screen (4) can be a part of the circuit board, and it is commonly seen that speaker and acoustic chamber are connected through the circuit board by acoustic coupling means. This is taught by Abraham. In Abraham, it shows the speaker (3-4) and the chamber (above 11) are connected through the circuit board (11) by an acoustic coupling means (7, 8).

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Hence, it would have been obvious for one skilled in the art to modify Smith as taught by Abraham, such that to reduce the thickness of the phone and yet to improve the frequency response of the speaker (col. 1, lines 7-10 in Abraham).

Regarding claims 17-18, Smith shows:

A housing (1);

At least one speaker (10);

At least one antenna (3, 4);

An acoustic resonance chamber (V);

At least one electromagnetic resonance chamber (fig. 2b);

The acoustic resonance chamber (V) is completely or partly located within the electromagnetic resonance chamber (fig. 2b) (col. 3, lines 59-63).

Smith differs from the claimed invention in that it does not explicitly show the speaker is at a distance from the acoustic chamber, or connected by an acoustic coupling means.

However, it is commonly seen that the speaker and the acoustic chamber are located at a distance apart from each other. This is taught by Abraham, such as the speaker (3-4) and the chamber (above 11) which are connected by an acoustic coupling means (7-8).

Hence, it would have been obvious for one skilled in the art to modify Smith by using a circuit board as part of the chamber design as taught by Abraham, such that to reduce the thickness of the phone and yet to improve the frequency response of the speaker (col. 1, lines 7-10 in Abraham).

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Regarding claims 2-10, 12-16, 19-26, 27-29, Smith or the combination of Smith and Abraham shows:

The antenna (3 in Smith) which can be a patch, loop, or dual band antenna;

The antenna wall (2, 3 in Smith) defines the acoustic walls;

The reinforcement elements (see 3 in fig. 3a in Smith);

The ground screen (4 in Smith);

The acoustic channel (7-8 in Abraham);

Acoustic chamber (16, 7-8 in Abraham);

The acoustic openings and their sizes can be varied (see 7, 22 in Abraham);

The electromagnetic resonance chamber (figs. 2a-b) is a combination of a gaseous dielectric (air) and a solid dielectric (fig. 2a);

The electromagnetic resonance chamber (figs. 2a-b) and the acoustic resonance chamber (V) share an amount of the gaseous dielectric (fig. 1a).

ARGUMENT

5. In response to the remarks (pages 7-13), in pages 7-8, applicant first argues that "Smith ... the space V ... solely dedicated to acoustic enhancement ... clearly does not serve as an electromagnetic resonance chamber, as recited in Applicant's claim 1".

The following is the examiner's comments, there is NO claimed languages about the acoustic chamber also serves as an electromagnetic resonance chamber in claim 1.

Claim 1 is claiming that the acoustic chamber is completely or partly located within the electromagnetic chamber, and Smith's acoustic resonance chamber (V)

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is completely or partly located within the electromagnetic resonance chamber (fig. 2b) (col. 3, lines 59-63). Therefore, claim 1 is met. Further, Smith's elements (V and 3) are part of each others, the acoustic chamber (V) also serves as an electromagnetic resonance chamber (3). In other words, the electromagnetic resonance would behave differently when chamber "V" is removed from the electromagnetic resonance chamber, therefore, putting the acoustic chamber (V) inside the electromagnetic resonance chamber (3), the acoustic chamber (V) also serves as an electromagnetic resonance chamber (3).

In pages 8-9, applicant argues that the examiner does not cite any Figures and specification. The examiner did cite Smith col. 3, lines 59-63 and fig. 2b. (note: "V" is only shown in Fig. 1, if applicant has looked at all the locations of "V", then he should have looked at Fig. 1).

In conclusion, claim 1 is clearly met by Smith.

In pages 9-10, in the combination of Smith and Abraham, applicant argues that Abraham's elements (7-8) are not equivalent to the acoustically coupling means of claim 11, then applicant states that Abraham ...numerals 7, 8 ... allow micro-leaks through the wall 18 to attenuate the resonant peak. In fact, applicant's statement about Abraham's numerals 7-8 is an answer to applicant's argument above. In other words, if Abraham's numerals 7-8 can attenuate the resonant peak, then it is an acoustic coupling means, and the claimed feature is met.

In page 11, in the combination of Smith and Abraham, applicant first argues that the volume above the circuit board 11 is not an acoustic resonance chamber. The examiner disagrees, otherwise, leak (7-8) is not needed.

6. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.


7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Chiang whose telephone number is 703-305-4728. The examiner can normally be reached on Mon.-Fri. from 8:00 to 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar, can be reached on 703-305-4731. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jack Chiang
Primary Examiner
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